CLAIMS:

1. A method for manufacturing a rod with an optical thin film wherein a plurality of rods are integrally fixed with a resin so as to have axes running in parallel to one another, the method comprising sequentially performing:

cutting the rods into a predetermined length;

polishing the cut endfaces of the rods; and

forming an optical thin film on the polished endfaces of the rods, wherein the resin has a melting point higher than the temperature to which the rods are exposed during said forming.

2. The method for manufacturing a rod with an optical thin film according to claim 1, wherein the rods each have a circular cross section and are aligned in parallel to and in contact with one another, and the resin is a thermoplastic resin, the method further comprising:

forming a rod block by allowing the resin to enter gaps between adjacent rods to thereby fix the rods to one another.

3. The method for manufacturing a rod with an optical thin film according to claim 2, further comprising:

separating the rods from one another by dissolving or swelling the thermoplastic resin with a solvent to dismantle the rod block after completion of said forming an optical thin film.

4. The method for manufacturing a rod with an optical thin film according to claim 3, wherein, in said separating the rods from one another, auxiliary energy is used.

5. The method for manufacturing a rod with an optical thin film according to claim 1, wherein the rods are rod lens preforms each having a predetermined refractive index

distribution.

6. A method for manufacturing a rod with an optical thin film, the method comprising:

forming a rod block by arranging a plurality of rods each having a circular cross section in parallel to one another along the axis of each rod, and by allowing a resin to enter gaps between the rods to fix the rods to one another;

cutting the rod block into a predetermined length;

polishing the endfaces of each rod positioned on the cut endface of the rod block;

forming an optical thin film on the polished endfaces of each rod, wherein the resin has a melting point higher than the temperature during said forming of the optical film; and

separating the rods from one another by removing the resin from the rod block.

7. The method for manufacturing a rod with an optical thin film according to claim 6, wherein the rods are rod lens preforms each having a predetermined refractive index distribution.

8. The method for manufacturing a rod with an optical thin film according to claim 6, wherein in said forming a rod block, the rods are arranged along a sheet made of the resin and the resin is melted in this state and then hardened to fix the rods to one another with the resin.

9. The method for manufacturing a rod with an optical thin film according to claim 6, wherein in said separating the rods from one another, a solvent for dissolving the resin and auxiliary energy for accelerating the dissolution of the resin is used.

10. A rod block comprising:

a plurality of rods each having an endface for the formation of an optical thin film, wherein the rods are arranged in parallel to one another on at least one flat plane;

a holding frame holding the rods; and

a resin material fixing the rods and the holding frame.

11. The rod block according to claim 10, wherein the rod is a base material for producing a predetermined gradient index rod lens.

12. The rod block according to claim 11, wherein the holding frame comprises two side plates, the side plates contacting the outermost rods, and two holding plates holding the rods and the two side plates, with each side plate and holding plate being made of glass.

13. The rod block according to claim 10, wherein the resin material is thermoplastic.

14. The rod block according to claim 13, wherein the melting point of the resin material is higher than that of the optical thin film.